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PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(PCT Rule 71.1)

To:

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Date of mailing
(day/month/year)

29.05.2006

Applicant's or agent's file reference
XA1910

IMPORTANT NOTIFICATION

International application No.
PCT/GB2005/050023

International filing date (day/month/year)
25.02.2005

Priority date (day/month/year)
01.03.2004

Applicant
BAE SYSTEMS PLC et al

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

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preliminary examining authority:



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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference XA1910		FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/GB2005/050023		International filing date (day/month/year) 25.02.2005		Priority date (day/month/year) 01.03.2004
International Patent Classification (IPC) or national classification and IPC INV. H04L12/56 H04L29/06				
Applicant BAE SYSTEMS PLC et al				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 2 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 12.12.2005		Date of completion of this report 29.05.2006		
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized officer Jaskolski, J Telephone No. +49 89 2399-7567		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2005/050023

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1, 3-9	as originally filed
2	received on 22.04.2006 with letter of 13.04.2006

Claims, Numbers

1-4	received on 22.04.2006 with letter of 13.04.2006
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Drawings, Sheets

1/3-3/3	as originally filed
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☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2005/050023

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-4
	No: Claims	
Inventive step (IS)	Yes: Claims	1-4
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-4
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V:

The document D1: WO 00/36792 (Siemens), published on 22 June 2000, was not cited in the international search report.

1. The present application meets the criteria of Article 33(1) PCT, because the subject-matter of claim 1 involves an inventive step in the sense of Article 33(3) PCT.

The document D1 is regarded as being the closest prior art to the subject-matter of claim 1 and discloses (the references in parentheses applying to this document):

a method of call control for continuous streams of data (page 2, line 14: "Voice over IP") in packet switched networks (page 2, line 1: "paketvermittelndes Netz") including at least two local area networks (Fig. 1: Rechner DK, Zugangsknoten ZK) in communication with one another across a connecting network (Fig. 1: Zwischenknoten ZW1 to ZW4), the method comprising the steps of:

a) determining an acceptable packet loss rate for a call which is to be established between two of the local area networks (page 9, lines 17-36: "demgemäss werden die ... Datenpakete ... einer mittleren Qualitätsklasse zugeordnet", "beispielsweise seien die ... Datenpakete der Prioritätsklasse 4 zugeordnet", "zur Beginn der Übertragung ... werden die Datenpakete also mit der Qualitätsklasse B und der Prioritätsklasse 4 gesendet");

b) comparing actual packet loss rate to the acceptable packet loss rate (page 9, line 36 to page 10, line 7: "dem Sender ... wird während der Übertragung ... die Qualitätsgüte ... wie z.B. die Paketverlustrate ... rückgemeldet und vergleicht ... mit der geforderten Qualitätsgüte"; page 5, lines 16-30); and

c) changing a priority of the call if the actual packet loss rate is greater than the acceptable packet loss rate (page 10, lines 7-13: "Zweckmässigerweise sind für den Vergleich mindestens eine obere Schranke und wenigstens eine untere Schranke festgelegt, deren Über- bzw. Unterschreiten ... einen Wechsel in eine andere Qualitätsklasse oder gegebenenfalls Prioritätsklasse auslöst"; page 5, lines 32-36); and

d) repeating steps b) to c) (page 12, line 9: "nach einer mehrmaligen Zuordnung in höhere Prioritätsklasse");

The main embodiment of D1, to which references are made, is based on a video connection, but D1 clearly states, page 11, lines 6-12, that any quality required connection, especially voice call services (Sprachdatendienst), named in D1 "Voice over IP", may be controlled correspondingly.

D1 uses as well a different terminology. The actual and the acceptable packet loss rates of claim 1 are called in the embodiment "Qualitätsgüte" (quality). However D1 clearly states that the quality may be the packet loss rate, page 10, lines 2-4: "die Qualitätsgüte wie z.B. ... die Paketverlustrate", or page 11, lines 8 to 12, especially for Voice over IP services. Accordingly, the initial assignment of the priority to the call in D1 strictly corresponds to the assignment of the initial acceptable packet loss rate, as they are related parameters, see D1, page 8, lines 6-12: "die Datenpakete ... mit einer ihrer Prioritätsklasse entsprechenden Marke gekennzeichnet werden, anhand welcher die gekennzeichneten Datenpakete bei einem Überlauf der Warteschlange verworfen werden können".

The subject-matter of claim 1 differs therefore from this known from D1 in that: "dropping the call if the actual packet loss rate is still greater than the acceptable packet loss rate" is performed.

Although D1, page 4, line 36 to page 5, line 3: "die Datenübertragung wegen einer für den Datendienst zu schlechten Qualität abgebrochen werden muss", discloses that "dropping the call if the actual packet loss rate is greater than the acceptable packet loss rate" belongs to the common general knowledge, this solution is presented in D1 only as an alternative to the remaining steps of the method of claim 1 known from D1. The subject-matter of claim 1 is therefore new.

By combining the alternative solutions known from D1 into one method the obvious advantages of both methods are combined, and the obvious disadvantages are eliminated. Therefore the subject-matter of claim 1 is considered to involve an inventive step as well.

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networks including at least two local area networks communicating to one another across a connecting network, the method comprising the steps of:

- a) determining an acceptable packet loss rate for a call which is to be established between two of the local area networks;
- 5 b) comparing actual packet loss rate to the acceptable packet loss rate;
- c) changing a priority of the call if the actual packet loss rate is greater than the acceptable packet loss rate and
- d) repeating steps b) to c) as appropriate, dropping the call if the actual packet loss rate is still greater than the acceptable packet loss rate.

- 10 Step d) may include determining for how long a period the actual packet loss rate has been happening and utilising that period in deciding to drop the call.

Additionally, a recorded announcement may be played when the call is to be dropped.

- 15 Alternatively, the priority of the transmission of the continuous stream of data may be changed when the actual packet loss rate is not acceptable and steps a) to c) above may be repeated.

In one embodiment of the present invention, data relating to dropped calls may be stored for future use.

- 20 For a better understanding of the present invention, reference will now be made, by way of example only, to the accompanying drawings in which:-

Figure 1 illustrates a conventional circuit switched telephony network;

Figure 2 illustrates a conventional IP telephony network; and

- 25 Figure 3 illustrates an opaque trunk IP telephony in accordance with the present invention.

Referring initially to Figure 1, a plurality of telephones 100, 200, 300 connected to respective local telephone exchanges 120, 220, 320 by respective lines 140, 240, 340. If a call is to be made between telephone 100 and telephone 200, the call must be routed via exchange 120, trunk connection 400

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CLAIMS:

1. A method of call control for continuous streams of data in packet switched networks including at least two local area networks in communication with one another across a connecting network, the method comprising the steps of:
- 5 of:
- a) determining an acceptable packet loss rate for a call which is to be established between two of the local area networks;
 - b) comparing actual packet loss rate to the acceptable packet loss rate;
 - c) changing a priority of the call if the actual packet loss rate is greater
 - 10 than the acceptable packet loss rate and
 - d) repeating steps b) to c) as appropriate, dropping the call if the actual packet loss rate is still greater than the acceptable packet loss rate.
2. A method according to claim 1, wherein step d) includes determining a period for how long the actual packet loss rate is greater than the acceptable packet
- 15 loss rate and deciding, based on that period, to drop the call.
3. A method according to claim 1 or 2, further including the step of playing a recorded announcement when the call is to be dropped.
4. A method according to any one of the preceding claims, further including the step of storing data relating to dropped calls for future use.

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